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Review Article

SIGRUSIREESHADI YOGA IN *MANDALIVISHA CHIKITSA*

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ABSTRACT

Agadatantra is one of the eight branches of Ayurveda that deals with toxicology. It primarily focuses on the study, prevention, diagnosis, and treatment of various toxic conditions affecting humans. Kerala has a rich and distinct tradition of *Visha chikitsa* renowned for its specialized therapies and effective management of venomous bites, food poisoning and environmental toxins. Many Malayalam texts that offer practical insights into toxicology, antidote formulations and indigenous treatment methods. *Prayogasamuchaya* is one among them which contain numerous formulations that are highly effective in managing various types of poisoning, venomous bites, and toxic conditions. *Sigrusireeshadi yoga* is explained in *Triteeya paricheda 'Mandali visha chikitsa'* of *Prayogasamuchaya*. It is indicated for external application in *Mandali vishaja sopha*. Swelling is the predominant symptom of viper bite, that requires emergency management. This *Yoga* contains 5 ingredients, including *Sigru, Sireesha, Punarnava, Aswagandha* and *Sundi*. This article aims to discuss the possible mechanism of action of *Sigrusireeshadi yoga* by analyzing its pharmacological properties. And the probable mode of use of this *yoga* in other *Vishaja sopha.*

INTRODUCTION

Ayurveda is an ancient system of medicine in India, is a holistic science that emphasizes the balance of body, mind and spirit for overall well-being. It focuses on preventive healthcare and curative treatments based on the principles of *Tridosha*, *Panchamahabhuta* and *Agni*. It is categorized into eight specialized branches and *Agadatantra* is one of the branch deals with the study, diagnosis and treatment of poisoning and toxic conditions. It addresses toxins from various sources including plants, animals, minerals and artificial substances. Kerala has a deeply rooted and esteemed tradition of *Visha chikitsa*, recognized for its advanced and effective practices in Ayurvedic toxicology. Tropical climate and dense forests of this region provided an ideal condition for reptiles to thrive, making snake bites a frequent occurrence in those times. Various formulations were developed to address emergency envenomation cases and manage the associated complications effectively.

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World Health Organization (WHO) estimates that in India about 5 million snake bites occur each year, resulting in up to 2.7 million envenomings[1]. In the past 20 years, nearly 1.2 million people have lost their lives as a result of snake bites[2]. Snakes from the Viperidae and Elapidae families are regarded as some of the deadliest and most dangerous snakes due to their highly potent venom, which can cause severe harm or even death if untreated. Vipers are hemotoxic in nature which primarily affects blood and tissues. The symptoms include severe pain, swelling, bleeding, bruising, discolouration, ulcers and tissue damage. In which swelling is the most prominent and early symptom. This can be compared with *Vishaja sopha*. *Keraleeya vishachikitsa sampradaya* holds a key position in snake bite management, with *Prayoga Samuchaya* emerging as a prominent and invaluable contribution to this specialized field. This article aims to review the *Sigrusireeshadi yoga* detailed in *Prayogasamucchaya*, in the context of *Mandalivisha* through analysing its pharmacological properties. Additionally, this formulation may also be effectively used in the treatment of various other inflammatory conditions.

AIM AND OBJECTIVES

This paper attempts to review the formulation *Sigrusireeshadi yoga,* based on its *Rasa Panchaka* and the pharmacological properties of its individual ingredients in the management of *Mandali Visha*.

MATERIALS AND METHODS

Review of Literature

Name of *Yoga*: *Sigru shireeshadi yoga*

Prayogasamucchayam, a traditional Malayalam text written by Kochunni Thampuran serves as a detailed reference on the management of snake bites and other forms of poisons. In *Triteeya paricheda* – '*Mandali visha chikitsa*' explains the diagnosis and treatment of *Mandali visha*. In this various *Yogas* for managing *Mandali vishajanya sopha* are explained. *Sigru shireeshadi yoga* is one among them. The *Yoga* consists of 5 herbs: *Sigru*, *Sireesha*, *Punarnava*, *Aswagandha* and *Sundi*. The ingredients are taken and made into a paste with rice washed water[3].

The same *Yoga* is told in *Kriyakoumudi mandalivisha prakarana*. It is not mentioned in *Brihatrayees* and *Laghutrayees*, and not in *Vishavaidya jyotsnika* also.

Prayogasamuchayam and *Kriyakoumudi* are among the most recent texts. Since *Sopha* was the predominant symptom of *Mandali visha* and highly relevant at that time, these books place greater emphasis on its treatment and include a larger number of formulations for its management.

Table 1: Ingredients of *Sigrusireeshadi Yoga*

Drug	Botanical Name	Family	Part Used
Sigru[4]	*Moringa oleifera*	Moringaceae	Bark
Sireesha[5]	*Albizia lebbeck*	Mimosaceae	Bark
Punarnava[6]	*Boerhavia diffusa*	Nyctaginacea	Root
Aswagandha[7]	*Withania somnifera*	Solanaceaea	Root
Sundi[8]	*Zingiber officinale*	Zingiberaceae	Rhizome

Table 2: Ingredients of *Sigrusireeshadi Yoga* and its properties

Drug	*Rasa*	*Guna*	*Virya*	*Vipaka*
Sigru[9]	*Tikta Katu*	*Ushna Rooksha Teekshna*	*Ushna*	*Katu*
Sireesha[10]	*Kashaya Tikta Madhura*	*Laghu Rooksha Teekshna*	*Ushna*	*Katu*
Punarnava[11]	*Madhura Tikta Kashaya*	*Laghu Rooksha*	*Ushna*	*Madhura*
Aswagandha[12]	*Katu Tikta Kashaya*	*Laghu Snigdha*	*Ushna*	*Katu*
Sundi[13]	*Katu*	*Guru Rooksha Teekshna*	*Ushna*	*Madhura*

Table 3: *Karma* of ingredients of *Sigrusireeshadi Yoga*

Drug	*Dosha Karma*	*Karma*
Sigru[4]	*Kaphavatahara*	*Vishahara Krimihara Kushtahara*
Sireesha[5]	*Vatapittahara*	*Vishahara Vranahara Varnya*
Punarnava[6]	*Kaphavatahara*	*Sothahara Soolahara*
Aswagandha[7]	*Kaphavatahara*	*Sukrakara Balya*
Sundi[8]	*Vatakaphahara*	*Rochana dipana vrishya*

Method of Preparation

In *Yoga* there is no mention of special ratio for the ingredients, so all the five ingredients are taken in equal quantity and made into a paste with rice washed water.

Mode of Administration

Sigrusireeshadi yoga is used for external applications. The prepared paste is applied over the affected area. *Lepa* should be removed instantly after drying by washing with lukewarm water[14]. As *Visha* is an emergency condition, so *Lepa* applied frequently.

Indication

In *Yoga*, it is mentioned as *"Mandalikshwelam kondundam neer samichu pom"* which means it cures the swelling produced by *Mandali sarpa*.

Analysis

Fig 1: Analysis of *Rasa* of ingredients of *Sigrusireeshadi Yoga*

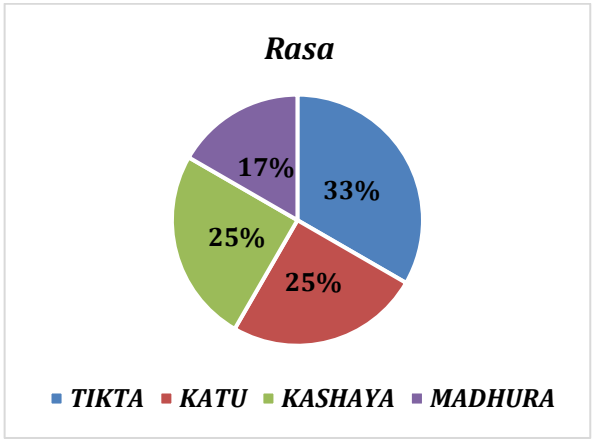


Fig 2: Analysis of *Guna* of ingredients of *Sigrusireeshadi Yoga*

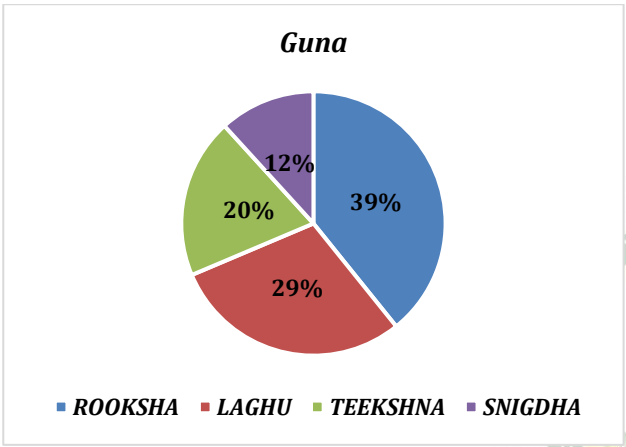


Fig 3: Analysis of *Veerya* of ingredients of *Sigrusireeshadi Yoga*

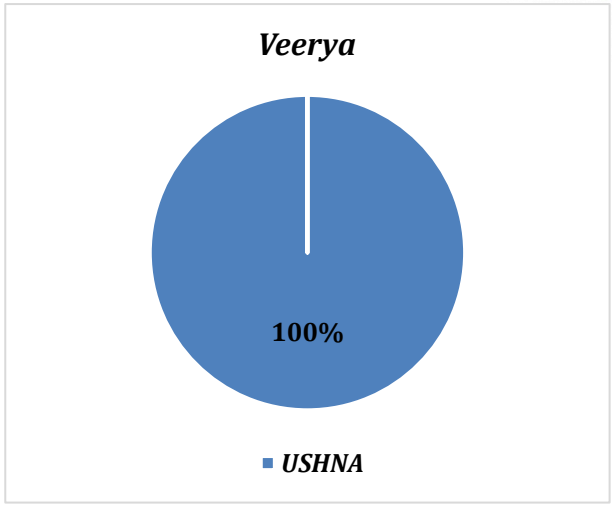


Fig 4: Analysis of *Vipaka* of ingredients of *Sigrusireeshadi Yoga*

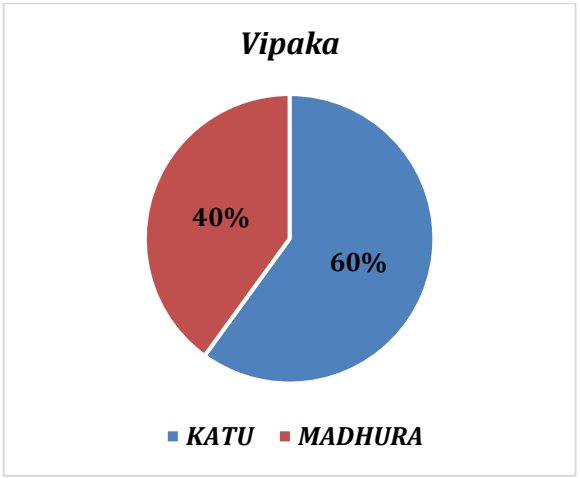
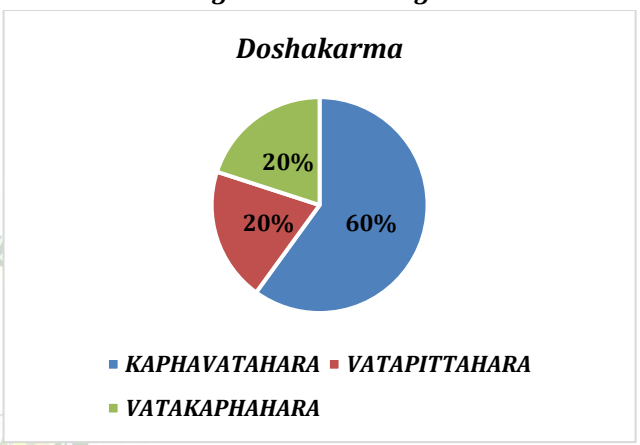


Fig 5: Analysis of *Doshaharatwa* of ingredients of *Sigrusireeshadi Yoga*



RESULTS AND DISCUSSION

Snake venom is a complex mixture of toxic substances designed to immobilize prey, helps in digestion and protect from danger. It is produced by specialized glands in venomous snakes and injected through fangs during a bite. It contains enzymes such as hyaluronidase, phospholipase A2 and metalloproteinases. These enzymes cause rapid fluid accumulation at the bite site, increased blood vessel permeability and tissue damage that triggers the body's inflammatory response.

Viper venom is predominantly hemotoxic and produces severe pain and burning sensation within minutes. And also produces swelling, redness and bloodstained discharge from the wound. Swelling is one of the most common and prominent symptoms. And it develops rapidly and can worsen if left untreated. Cytotoxic and hemotoxic properties of venom contribute to the intense swelling. It develops within minutes after the bite and can rapidly spread to nearby areas. The swollen area becomes red, painful to touch and warm. In severe cases may develops blisters, bruising, bleeding and ulcers. Complications of viper bite includes tissue necrosis, abscess formation and secondary infections like cellulitis, sepsis or tetanus.

Mandali vishajasopha predominantly involves *Pitta* and *Rakta* along with *Kapha* imbalance. It presents with distinctive circular swelling, pain and systemic complications. Its management requires prompt detoxification, pacifying inflammation and restoring balance using herbs, therapies and dietary adjustments.

Sigrusireeshadi yoga is mentioned in the context of *Mandali visha*. It has five ingredients. While analysing the pharmacological properties of *Yoga*, 33% drugs possess *Tikta rasa*, 25% possess *Kashaya rasa* and *Katu rasa*, 17% possess *Madhura rasa*. *Tikta*, *Kashaya* and *Katu rasa* are told to be *Kaphasamaka rasas*. Except *Katu* other three alleviate *Pitta dosa*. As *Mandali visha* is said to be *Pittapradhana* and the *Sopha* possess *Pitta*, *Rakta* and *Kapha* involvement. *Tikta rasa* alleviate *Krimi*, *Visha*, *Kushta*, *Pitta* and *Kapha*. It is *Kleda soshana*[15]. *Kashaya rasa* is *Pitta kaphahara*, *Rakta vishodhana*, *Ropana*, *Kleda soshana*, *Grahi* and *Twak prasadana*[16]. *Katu rasa* is *Kushta*, *Sopha*, and *Kaphahara*. It is also *Kleda soshana*, *Sroto sodhana* and *Vrana avasadana*[17]. *Madhura rasa* is *Pittahara* and *Vishahara*[18]. 39% of drugs possess *Rooksha guna* which helps in reducing *Kapha dosha* and 29% possess *Laghu guna* with its light, dry and penetrating properties to get into the tissues. 100% of drugs possess *Ushna veerya* which helps in reducing *Kapha dosha*. 60% of drugs possess *Katu vipaka* which pacifies *Kapha dosha*. And 40% possess *Madhura vipaka*, which alleviate *Vata* and *Pitta dosha*. 60% of the drugs are *Kaphavatahara* by which alleviate the *Mandalivishaja sopha*.

In the *Yoga*, *Sigru* has *Kushtahara*, *Krimihara* properties. Studies show that *Moringa oleifera* tree is rich in phytonutrients and other disease-fighting antioxidants, as well as high levels of protein, all necessary amino acids, a full range of vitamins and minerals. Thus, it possesses anti-inflammatory and antioxidant properties[19,20]. *Punarnava* has *Kaphavatahara* property which helps in reducing *Sopha* and *Soola*. *Boerhavia diffusa* has chemical constituents such as punarnavine, kaempferol, quercetin derivatives, luteolin. Pharmacological research has demonstrated its anti-inflammatory, antioxidant and immunomodulatory effects[21,22]. *Aswagandha* has *Balya* and *Rasayana* property may enhance tissue repair and recovery. *Withania somnifera* contains active principles such as withaferin A, withanosides, beta-sitosterol and flavonoids. Studies have proven that it exerts multiple pharmacological actions, including neuroprotection, cardio-protection, anti-inflammatory, antioxidant and anti-stress effects. *Sunti* possess *Vatakaphahara* property. Research has shown that ginger possesses powerful anti-inflammatory and analgesic properties, which can significantly reduce swelling, pain and inflammation[23]. *Sireesha* possess *Vranahara* and *Varnya* properties. *Sigru* and *Sireesha* are having *Vishaghna* property also. *Sireesha* is also considered as the *Agrya oushadha* in *Visha*. And the *Lepa* is prepared with *Kanji*, which has *Pittahara* and *Dahasamaka* properties. Studies have shown that rice washed water exhibits significant anti-inflammatory and antioxidant properties[24,25].

Sopha is characterized by localized swelling, inflammation and impaired *Dosha* imbalance. *Mandalivishaja sopha* is a specific form of *Sopha* caused by toxic factors, often presenting with severe inflammatory symptoms. The *Sigrusireeshadi yoga* possess *Sophahara*, *Vishaghna* and *Rakta prasadana*. So, this can also be effectively employed in the management of *Sopha,* because they possess therapeutic properties that address the core pathological factors common to both conditions.

CONCLUSION

In Ayurveda, *Sopha* refers to localized or systemic inflammation characterized by swelling, pain and discolouration. *Mandalisarpadamsa* symptoms involve swelling, yellowish discoloration of body, pain and burning sensation. Swelling is the predominant symptom. Ayurveda offers a comprehensive and holistic approach to managing *Sopha* by addressing its root cause, balancing the aggravated *Doshas,* and promoting systemic healing. While analyzing the pharmacological properties of the ingredients of *Sigrusireeshadi yoga*, it is concluded that *Yoga* can effectively cure the *Vishaja sopha*. It is mentioned in *Prayogasamuchayam*, it clearly describes that was effectively cure the *Mandalivishaja sopha*. The effect may be increased along with the use of internal medications. The *Yoga* can be subjected to further research studies including both invitro and clinical trials to prove its efficacy in other inflammatory conditions. The five ingredients of this *Yoga* are easily available and have anti-inflammatory and anti-toxic properties. Further clinical research can be performed to enhance comprehension of its efficacy.

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